

REMARKS

Applicants thank the Examiner for the through consideration given the present application. Claim 1-14 are pending in this application. Claims 1, 5, 6, 9, 10, 12 and 14 are independent. Reconsideration of this application, as amended, is respectfully requested.

Allowable Subject Matter

Applicant thanks the Examiner for allowing claims 5-13.

Claim Objections

Claim 3 is objected to because there is no proper antecedent basis for the terms "the gate transmitting wires." Applicant respectfully traverses this objection based on the above amendment of claim 3 that changes "the gate transmitting wires" to - - the transmitting wires - -.

Claim 1 recites "a plurality of transmitting wires on the lower substrate" and this quoted language provides proper antecedent basis for the term "the transmitting wires" in amended claim 3.

Applicants respectfully submit that the scope of claim 3 has not been narrowed in any way by this Amendment.

Rejection Under 35 U.S.C. §103(a)

Claims 1-3 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,587,160 to Lee et al. (hereinafter, "Lee") in view of U.S. Patent No. 5,684,555 to Shiba et al. (hereinafter, "Shiba"). Claim 4 is rejected under 35 U.S.C. §103(a) as being unpatentable over Lee in view of Shiba and further in view of U.S. Patent No. 5,945,984 to Kuwashiro. Claim 14 is rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,995,189 to Zhang in view of Lee and further in view of U.S. Patent No. 6,400,438 to Noritake et al. These rejections are respectfully traversed.

Initially, with respect to claims 1-3, Applicants respectfully submit that both Lee and Shiba fail to disclose a number of positively recited features.

Lee fails to disclose a source printed circuit board PCB, or a gate printed circuit board PCB, both of which features are positively recited in claim 1. The Office Action relies on Fig 6.

Nor does Lee disclose a source PCB and a gate PCB connected together by transmitting wires of any kind.

The Office Action alleges that Lee discloses a plurality of transmitting wires 110, 111, 112 on the lower substrate that are electrically connected with the gate and source pads across the sealant. Applicants respectfully disagree. In Lee, lines 110, 111 and 112 are dummy lines running parallel to and inside of the seal 90. Lee does not disclose that dummy lines 110, 111 and 112

crossing the seal. The Office Action relies on Fig. 6 and col. 8, lines 17-32 of Lee. An inspection of Fig. 6 reveals that dummy line 110 is shown, dummy lines 111 and 112 are not shown, and that dummy line 110 is shown running parallel to seal 90. Col. 8, lines 17-32 of Lee refers to Fig. 10 of Lee, which shows dummy lines 111 and 112, neither of which is shown crossing seal 90. In fact, seal 90 is not shown in Fig. 10.

Thus, Lee does not disclose a plurality of transmitting wires 110, 111 and 112 being electrically connected with the gate and source pads across the sealant.

Nor is the alleged curved shape of wires 110, 111 and 112 along the sealant shown in Lee. Applicant cannot find curved versions of lines 110, 111 or 112 anywhere in Lee.

The Office Action then admits that Lee does not disclose a source PCB and a gate PCB electrically connected with a plurality of source pads and a plurality of gate pads and formed along a first side and a second side, respectively, of the lower substrate.

To remedy this admitted deficiency in Lee, the Examiner turns to Shiba, who, shows an LCD panel having a plurality of data line pads 761-764 located outside of a sealing region 111 that has a seal 113. Shiba's data line pads 761-764 are connected to data lines that cross the seal, thereby connecting all the data lines to the data line driver circuits found on the X driver circuit board

800. Similarly, all of Shiba's scanning lines are connected to the scanning line circuits found on the Y driver circuit board 900.

Shiba does not disclose a plurality of transmitting wires on the lower substrate that connect the gate and source pads across the sealant. The source pads 761-764 are connected only to the data driver lines across the sealant. Source pads 761-764 are not connected to any gate pads across the sealant. Nor are the data lines curved. As shown in Fig. 3, the data lines X1, X2, X3 and X4 are straight.

So, even if Shiba were properly combined with Lee, which it is not for reasons presented below, the resulting reference combination would not meet or render the claimed invention obvious.

Furthermore, the Office Action does not make it clear why one of ordinary skill in the art would have the desire to somehow modify the dummy lines 110, 111, 112 of Lee, which are disclosed as straight and only inside of the seal, to become curved and cross the seal and to achieve the claimed invention and, if such a modification were made, how the resulting device would work at all, let alone more efficiently, unless the motivation were improper hindsight reconstruction of the claimed invention.

The Office Action is essentially attempting to modify a reference, like Lee, that does not show drive circuit coupling features, by providing a reference, Shiba, that shows a particular type of drive coupling features, by incorporating

features not shown in either Lee or Shiba and by trying to use dummy lines that are not meant to interconnect gate and data drive circuits to interconnect gate and data drive circuits without indicating why one of ordinary skill in the art would have a desire to do so. Moreover, the Office Action fails to explain why, for example, one of ordinary skill in the art would be motivated to use Lee's dummy lines 110, 111 and 112 to do something they are not designed to do in Lee and perform a function (of interconnecting gate and data drive circuits) that is not found in Shiba.

Because of these problems with the rejection, Applicants respectfully submit that the rejection is based on either unfounded speculation, which cannot serve as a proper basis for a rejection, or hindsight reconstruction of Applicants' claimed invention based solely on Applicants' own disclosure. Both of these grounds are impermissible sources of motivation to come up with the claimed invention. See, in this regard, In re GPAC, Inc., 35 USPQ2d 1116 at 1123 (Fed. Cir. 1995) and Ex parte Haymond, 41 USPQ2d 1217 at 1220 (Bd. Pat. App. & Int. 1996), and In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002).

With respect to the alleged motivation to modify Lee in view of Shiba, the assertion that one would be motivated to modify Lee in view of Shiba to achieve an LCD panel having an outside dimension relatively small with regard to the display area is nothing more than a broad conclusory statement about the

teaching of a particular reference which, standing alone, is not "evidence." See In re Dembiczak, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999). As pointed out in that case, what is needed for proper motivation is a clear and particular showing of motivation, which is lacking for reasons presented above.

Accordingly, the Office Action fails to make out a *prima facie* case of proper motivation to modify Lee in view Shiba, and also fails to make out a *prima facie* case of obviousness of the claimed invention based on Lee and Shiba.

In rejecting claim 4, the Office Action further relies on Kuwashiro for teaching of disposing dummy pads between data pads to inspect and repair a display. However, Kuwashiro does not teach or suggest the above cited features of claim 1 incorporated in claim 4, and therefore fails to cure the deficiencies of Lee and Shiba with respect to claim 1, from which claim 4 depends.

With respect to the rejection of claim 14, Zhang shows a pixel section 202 formed on a substrate 201, signal line drive circuit 203, and scanning line drive circuit 204, as well as signal lines 205, formed on the pixel region 202, gate insulating film 206 formed on each of the components 203, 204, 205 and gate electrodes 207, 208, 209 formed on the gate insulation film 206, as shown in Fig. 2a.

However, contrary to what is alleged in the rejection, Applicants do not believe that Zhang shows that the gate transmitting wires 109 connect the gate pads 104 to the source pads 103. Col. 6, lines 51-59, referenced in the rejection to support this allegation, actually discloses that “external terminal 108 is connected with the signal line drive circuit 103 and the scanning line drive circuit 104 through wirings 109, respectively.” Reference to Fig. 1 reveals that different lines 109 lead from 108 to 103 than lead from 108 to 104. This is not a disclosure of gate transmitting wires 109 connecting gate pads and source pads.

Moreover, Zhang does not disclose transmitting wires, which connect gate pads and source pads formed on adjacent sides of a lower substrate such that the transmitting wires are formed in a curved shape, as required by the present invention.

To remedy the defect mentioned in the preceding paragraph, the rejection turns to Lee. Unfortunately, Lee does not disclose a plurality of transmitting wires 110, 111 and 112 being electrically connected with the gate and source pads across the sealant, for reasons stated above regarding traversal of the rejection of claims 1-3.

Nor is the alleged curved shape of wires 110, 111 and 112 along the sealant shown in Lee. Applicant cannot find curved versions of lines 110, 111 or 112 anywhere in Lee.

So, even if one were properly motivated to modify Zhang in view of Lee, which has not been demonstrated by objective factual evidence, the resulting reference combination would not meet, or render the claimed invention obvious.

The Office Action then turns to Noritake, which discloses how to obtain a plurality of transparent insulator substrates from a mother glass board by scribing and breaking. The Office Action fails to make out a *prima facie* case of proper motivation to modify Zhang and Lee in view of Noritake because the LCD panels of Zhang and Lee have already been formed and there would be no incentive to reform their substrates using the scribe and break method of Noritake. Nor do Zhang or Lee disclose a need for their substrates to be made as Noritake makes its substrates. Without a need to do so, the alleged desire to do so is merely speculative.

Applicants respectfully submit that this rejection is based solely on improper hindsight reconstruction of Applicants' claimed invention based solely on their disclosure.

Furthermore, even if Zhang and Lee were modified as suggested, they would not result in, or render obvious, the claimed invention because the resulting reference combination would still be missing a number of claimed features including, for example, a connection between the gate pads and the source pads, as recited, as well as the curved transmitting wires.

In view of the foregoing, it is respectfully submitted that independent claims 1 and 14 patentably distinguish over the cited art, taken alone or in combination, and reconsideration and withdrawal of the rejections under 35 U.S.C. §103(a) are respectfully requested. Since the remaining claims depend directly or indirectly from allowable independent claims, they should also be allowable for at least the reasons set forth above, as well as the additional limitations provided by these claims. Therefore, all pending claims should be in condition for allowance.

CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.

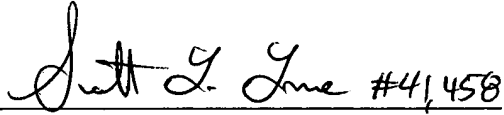
If there are any outstanding issues, however, the Examiner is invited to telephone Robert J. Webster, Reg. No. 46,472, at (703) 205-8000 in an effort to expedite prosecution.

Pursuant to the provisions of 37 CFR 1.17 and 1.136(a), Applicants respectfully petition for a one (1) month extension of time for filing a response in connection with the present application. The required fee of \$110.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

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